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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------|-------------|----------------------|---------------------|------------------|
| 10/635,382 | 08/06/2003 | Donald Sheley Tracey | 1999B062A | 1278 |
| 23455 | 7590 | 11/01/2005 | EXAMINER | |
| EXXONMOBIL CHEMICAL COMPANY | | | KNABLE, GEOFFREY L | |
| 5200 BAYWAY DRIVE | | | ART UNIT | |
| P.O. BOX 2149 | | | PAPER NUMBER | |
| BAYTOWN, TX 77522-2149 | | | 1733 | |

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|---------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/635,382 | Applicant(s) TRACEY ET AL. | |
| | Examiner Geoffrey L. Knable | Art Unit 1733 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12-8-03;7-15-04</u> | 6) <input type="checkbox"/> Other: ____ |

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1. The status of the parent application should be updated in the first page of the specification (i.e. add the patent number).
2. Claims 4-7 and 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4-7 and 19-22 each define the amount of the polymer in "parts per hundred rubber" (phr), it being assumed from the disclosure read as a whole that the halogenated isobutylene-co-alkylstyrene polymer is part of what is termed "rubber" in this context. However, claims 7 and 22 each describe the presence of "at least 100 parts per hundred rubber" of the halogenated isobutylene-co-alkylstyrene polymer, it being inconsistent to include greater than 100 phr of the halogenated isobutylene-co-alkylstyrene polymer if the halogenated isobutylene-co-alkylstyrene polymer is part of the rubber component of the composition. It therefore is not clear what is meant by "parts per hundred parts rubber". It would seem that "at least" should be deleted before "100" in claims 7 and 22 to avoid this ambiguity.

Along somewhat similar lines, assuming that the halogenated isobutylene-co-alkylstyrene polymer is part of the rubber component of the composition, then claim 22 would seem to conflict with claim 13. In other words, reading claim 22 as requiring that all of the rubber in the composition is the halogenated isobutylene-co-alkylstyrene polymer, then this would conflict with the claim 13 requirement for the presence of a second rubber. Clarification is required.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 2, 4-11, 13-26, 28-30 and 32-36 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/48033 to Tracey et al.

WO 01/48033 is apparently equivalent to the parent to this CIP application, this reference clearly suggesting inner tubes and tire assemblies from halogenated (brominated) isobutylene-co-paramethylstyrene alone or in blends, this being considered to therefore suggest materials that fall within and therefore satisfy each of

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the listed more broadly defined claims. This reference is considered to be available as prior art as it was published on July 5, 2001, this being more than one year prior to the August 6, 2003 filing date for this application. In particular, it is noted that it is not considered that any of the noted claims is fully supported in the parent application and thus would not be entitled to benefit of the filing date of the parent application (or its corresponding provisional application). More specifically, a complete reading of the parent application indicates that the broadest description therein (e.g. in the field of invention on page 1 and repeated throughout) of the polymer desired for the inner tube was that it be halogenated isobutylene-co-paramethylstyrene. There is not considered to be any indication of possession of the composition for the inner tube in any more broadly defined manner. As such, none of the noted claims, in which the polymer is more broadly defined, are considered to be entitled to benefit of this filing date. The parent application also does not seem to reasonably support or show possession of the invention for any blends other than with a second "isobutylene based rubber", i.e. it is not considered to support the now claimed blends with an undefined or broadly defined "second rubber" as claimed. Note that claim 3 has not been included within this rejection as the parent application does fully support this claim (similar claims 16 and 30 however were not considered to be fully supported because of the more broadly defined blend as noted above).

7. Claims 12, 27, 31 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/48033 to Tracey et al. taken in view of Costemalle et al. (US 5,333,662).

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WO '033 describes that the polymer can be "halogenated" but only specifically mentions bromine as the preferred halogen and therefore does not expressly describe chlorine. It however is submitted that chlorine is a well known alternative halogen used in similar polymers (e.g. note Costemalle et al.), use of such as the halogen as required by claims 12, 27 and 37 therefore being an obvious alternative to bromine.

As to claim 31, WO '033 does not describe blending with EPDM. It however is apparently known in this art, for polymers used in similar applications (i.e. inner liners for tires), to be suitable and effective to blend other rubbers therein including EPDM (note col. 6, lines 28-44 of Costemalle et al.), inclusion of such therefore being considered to have been obvious.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,626,219. Although the conflicting claims are not identical, they are not patentably distinct from each other because the more narrowly defined invention claimed in the

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conflicting patent is fully encompassed (except for claims 12, 27, 31 and 37) within the present more broadly defined claims. The invention of present claims 12, 27, 31 and 37 would likewise have been obvious over the conflicting claims of the patent in light of Costemalle et al. (US 5,333,662) as applied above.

10. Claims 1-30 and 32-37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Elspass et al. (US 5,807,629).

Elspass et al. discloses elastomer materials that can be used in the formation of inner tubes (note col. 3, line 30 as well as claims 5-6), these elastomer materials including brominated isobutylene paramethylstyrene or EXXPRO® as claimed (e.g. note example 10 as well as col. 2, lines 9-31). This would thus seem to clearly suggest an inner tube as required by claims 1-3 and 11. This rejection has however been alternatively made under 35 USC 103(a), insofar as it could be argued that the reference does not explicitly combine the recitation of an inner tube with the particularly defined brominated or halogenated isobutylene paramethylstyrene (e.g. ex. 10 does not define a product). It is submitted however that even if it were deemed not to be explicitly within the disclosure of this reference, it certainly would have been obvious to use any of the noted compounds or compounds classes as an inner tube in light of the explicit teachings that the inventive compounds have use as inner tubes – note again col. 3, line 30 as well as claims 5-6. As to claims 4-6, insofar as the reference indicates that the elastomer material can be used “as is” to form an inner tube, this would seem to suggest 100% of the noted polymer is suitable, this being well above the claimed lower

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limits. As to claims 8-9 and 23-24, a curing agent as well as fillers are suggested (e.g. note ex. 10). As to claims 10, 25 and 35, the reference describes a particular product EXXPRO® 89-4 but the examiner is not able to determine if this would necessarily have a halogen level within the range claimed. In any event, it is considered to have been well within the skill of the ordinary artisan to select an appropriate level of halogenation, it being stressed that the properties and function of this polymer class is apparently well studied and understood. As to claims 12, 27 and 37, note col. 2, lines 27-32. As to claims 13-18, 28-30 and 32-34, blending with other rubbers including isobutylene based polymers and copolymers is suggested (col. 3, lines 30-46). As to claims 19-22, it would seem from col. 3, lines 33+ that the other rubber would be added in relatively small amounts (to lower viscosity or aid processing), this therefore seemingly indicating that the other polymer would predominate and thus would meet these claims. Note also the amounts in the blend in ex. 2 seems to be consistent with this. In any event, it would have been within the skill of the artisan to determine an appropriate blend through a balancing of the properties desired against the costs, etc. of the EXXPRO® polymer.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elspass et al. (US 5,807,629) taken in view of Costemalle et al. (US 5,333,662).

As to claim 31, Elspass et al. disclose blending with other rubbers as noted above but does not describe blending with EPDM. It however is apparently known in this art, for polymers used in similar applications (i.e. inner liners for tires), to be suitable and effective to blend other rubbers therein including EPDM (note col. 6, lines 28-44 of

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Costemalle et al. '662), inclusion of such therefore being considered to have been obvious.

12. Claims 1-16, 19-32 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Costemalle et al. (US 5,333,662) taken in view of Elspass et al. (US 5,807,629) and the excerpted portion of the Polymeric Materials Encyclopedia (pp. 3484-3492; cited by applicant).

Costemalle et al. suggest compound and curing systems (including blends with various rubbers such as natural rubber, EPDM, etc. - not esp. col. 6, lines 28-44) that are considered to be consistent with those claimed, these being described as advantageous as tire innerliner compositions. The principal difference from the noted claims is thus that this reference is directed to tire innerliners rather than tire inner tubes. As is well known, however, the functional requirements for a tire inner liner and a tire inner tube are very similar, it being very common to employ essentially the same compounds for both (typically butyl type compounds). To form an inner tube from the advantageous innerliner compositions of Costemalle would therefore have been obvious for the expected benefits of heat aging resistance, etc. Note also Elspass, directed to similar compounds, expressly indicates an understanding that such compounds have known use as both innerliners and inner tubes. Further, the excerpted Polymeric Materials Encyclopedia, like Costemalle, indicates that EXXPRO™ elastomers have advantages for tire innerliners – additionally, page 3491 of this excerpt also suggests that “tire bladders” are increasingly adopting the EXXPRO™ elastomers for the expected improved flex and heat aging properties.

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13. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Costemalle et al. (US 5,246,778).

Costemalle et al. '778 relates to a composition consistent with the noted claims for an "inner tube" of a hose, it being noted that at present the claims do not specify or require a *tire* inner tube.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Geoffrey L. Knable
Primary Examiner
Art Unit 1733

G. Knable
October 29, 2005